Practice Set B · Reasoning

Two or more steps, or a step you have to choose for yourself. Show every line — marks live in the working.

#	Question	Your working and answer
1	Find the LCM and HCF of 12, 15 and 21 by the prime factorisation method.	
2	Find the LCM and HCF of 17, 23 and 29 by the prime factorisation method.	
3	Find the LCM and HCF of 8, 9 and 25 by the prime factorisation method.	
4	Explain why $7 \times 11 \times 13 + 13$ is a composite number.	
5	Explain why $7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 + 5$ is a composite number.	
6	There is a circular path around a sports field. Sonia takes 18 minutes to drive one round; Ravi takes 12 minutes. If they start together at the same point and go the same direction, after how many minutes will they meet again at the starting point?	
7	Prove that $7\sqrt{5}$ is irrational.	

Every proof in this chapter, from HCF to √2, comes back to one fact: primes factorise a number in exactly one way. Hold onto that, and the rest follows. □√2